AKIHO KAWADA

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Pronouns: she/her/hers ◇ Nationality: Japanese

Website: https://akiho-kawada.github.io/

EDUCATION

the University of Tokyo — April 2021 – March 2026 (Expected)
Bachelor of Engineering in Systems Innovation — *Tokyo, Japan*

Advisors: Prof. Yutaka Matsuo and Prof. Yusuke Iwasawa

EXPERIENCE

Cornell University – Cornell Tech — June - November 2025 (Expected)
Undergrad Research Assistant / Visiting Student Researcher — *Hybrid*

· Supervisor: Prof. Udit Gupta
· Research Group: S4(Scalable, Specialized, Sustainable, Systems for)AI Lab, Cornell University Computer Systems Laboratory
· Project: High-Performance and Efficient Agentic AI Systems
· Remote (Jun–Aug), on-site (Sep–Nov)

the University of Tokyo — April - September 2024, January 2025
Thesis Student — *Tokyo, Japan*

· Advisors: Prof. Yutaka Matsuo and Prof. Yusuke Iwasawa
· Research Group: Matsuo-Iwasawa Lab;
  One of the most renowned ML research labs in Japan
· Explored training-free network pruning methods by identifying high-performing sparse subnetworks with fixed initial weights.

University of California, Santa Barbara — October - December 2024
Visiting Student Researcher — *Santa Barbara, CA*

· Supervisor: Prof.Jonathan Balkind
· Research Group: UCSB ArchLab
· Project: Pengwing, A Novel Blended OS for Heterogeneous SoCs
· Implemented a hardware-based `malloc` in RTL for heterogeneous computing systems. Verified correct operation on FPGA in conjunction with a hardware garbage collector.

Google Summer of Code — May - August 2024
GSoC Student / Contributor — *Remote*

· Mentors: Dr.Jonathan Balkind, Dr.César Fuguet Tortolero and Ms.Noelia Oliete Escuín
· Organization: Free and Open Source Silicon Foundation
· Project: Transforming the OpenHW High Performance Data Cache into a High Performance Instruction Cache
· Extending the high-performance data cache (HPDC) integrated into the CVA6/Ariane core to also function as an instruction cache.
  Created and submitted multiple upstream pull requests to the openhwgroup/cva6 and openhwgroup/cv-hpdcache repositories

the University of Tokyo   October 2023 - June 2024
Undergraduate Research Assistant   *Tokyo, Japan*

· Supervisor: Prof. Atsutake Kosuge
· Research Group: Kosuge Lab, Department of Electrical Engineering and Information Systems, Graduate School of Engineering, the University of Tokyo
· Conducted RTL design, evaluation, and FPGA validation of pre-processing hardware modules for energy-efficient DNNs.
Worked on an ultra-low-power audio feature extractor chip for real-time sound recognition, focusing on FFT architecture and filter bank optimization.
· This research resulted in a first-author paper accepted at the IEEE Asia Pacific Conference on Circuits and Systems (APCCAS) 2024 and presented in Taipei, Taiwan.

AKARI, Inc   December 2022 - January 2024
Machine Learning Engineer Intern / Software Engineer Intern   *Tokyo, Japan*

· One of the largest venture companies originating from the University of Tokyo
· [Computer Vision Group] Containerized a cutting-edge segmentation model and its inference systems, and deployed them as a scalable microservice, making it accessible via a REST API for easy integration with existing and future applications.
· [LLM Group] Fine-tuned some large language models such as Llama 2 and Vicuna, using Kubernetes GPU clusters.
· [LLM Group] Developed some Retrieval Augmented Generation (RAG) services for several customer companies (algorithm side).
· [Software] Developed and maintained web applications using Typescript, React and NextJS.
· Employment type: Full-time (Feb–Mar, Aug–Sep 2023); Part-time (other months)

AWARDS

the University of Tokyo Musha Shugyo Program   July - December 2024
Granted two months of stipend and travel costs.
("Musha Shugyo" refers to the practice of traveling with the purpose of gaining skills.)

PUBLICATIONS

- **A 250.3mW Versatile Sound Feature Extractor Using 1024-Point FFT 64-ch LogMel Filter in 40nm CMOS**
  <u>Akiho Kawada</u>[*], Kenji Kobayashi[*], Jaewon Shin, Rei Sumikawa, Mototsugu Hamada, Atsutake Kosuge
  Accepted to the IEEE Asia Pacific Conference On Circuits and Systems (APCCAS) 2024

TECHNICAL SKILLS

Programming Languages / HDL	Verilog/SystemVerilog, Python3, Javascript/TypeScript, C/C++
Frameworks	PyTorch, React, NextJS
Hardware Tools	Verilator, Vivado, Synopsys VCS & Verdi
Devops / Tools	Docker, Kubernetes, Git